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World Forum for Harmonization of Vehicle Regulations**Working Party on Brakes and Running Gear (GRRF)****Seventy-fourth session**

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Item 5(a) of the provisional agenda

Motorcycle braking – Regulation No. 78**Proposal for an Amendment to Regulation No. 78
(Uniform provisions concerning the approval of vehicles of
categories L₁, L₂, L₃, L₄ and L₅ with regard to braking)****Submitted by the expert from International Motorcycle Manufacturers
Association***

The text reproduced below was prepared by the expert from the International Motorcycle Manufacturers Association (IMMA) in order to introduce amendments to clarify the current text for the use of Combined Braking Systems (CBS). The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, program activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Paragraph 5.1.9., amend to read:

"5.1.9. In cases where two separate service brake systems are installed, ~~the systems may share a common brake~~, if a failure in one system ~~occurs does not affect the performance of the other~~, **such a failure does not preclude the other system from meeting the single brake system performance requirements.**"

II. Justification

1. All Combined Brake Systems (CBS) that guarantee, in case of failure in one system, compliance to the single brake system performance requirements of the other, should be allowed.
 2. Most traditional motorcycles are equipped with a conventional brake system with two separate service brake systems. In case of a failure in one system (a brake operating on one wheel), the other system (the brake operating on the other wheel) can still be activated to reduce the vehicle speed and stop the motorcycle. In this case, required minimum deceleration as given in Annex 3, paragraph 3.3., is 4.4 m/s² (Front wheel MFDD) or 2.9 m/s² (Rear wheel MFDD).
 3. On the other hand, in case of a failure, CBS is required so that deceleration should be 5.1 m/s² or 2.5 m/s² based on the requirements as shown in Annex 3 paragraph 3.3., which is depended on interpretation of paragraph 5.1.9.
 4. For combined brake systems, the requirements are (Category L₃):
MFDD = 5.1 m/s²
MFDD = 2.5 m/s² (for the secondary service brake system).
 5. A CBS is deemed to be acceptable when a failure in one system of a CBS occurs but the single brake performance is still met by the other systems, as these provisions are at least equivalent to the requirements for conventional braking systems
 6. This amendment clarifies the interpretation of para. 5.1.9. according to the above justification.
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